

Appl. No. 10049,787
Amtr. dated October 17, 2003
Reply to Office Action of May 20, 2003

IN THE SPECIFICATION:

Please amend the specification as follows:

On page 1 first paragraph please amend the claim of priority as follows:

Applicants claim priority under 35 U.S.C. 119 of Austrian Application No. A 1408/99 filed August 16, 1999. Applicants also claim priority under 35 U.S.C. ~~§ 119~~ 371 of PCT/AT00/00221 filed August 16, 2000. The international application under PCT article 21(2) was not published in English.

Please amend the first paragraph on page 1 after the claim of priority as follows:

The invention relates to a welding device ~~of the type~~
~~outlined in the generic part of claim 1 having a current source~~
~~for supplying electrical energy to at least one electrode and a~~
~~control and/or evaluation unit, cooperating with the current~~
~~source. The evaluation unit has an input device for setting~~
~~various welding parameters. There is also a communication~~
~~interface connected to the control or evaluation unit to set up a~~

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two-way data exchange between the welding device or the current source via a web server such as a HTTP server. The invention also relates to, a method of operating a welding device as outlined in the generic part of claim 29 as well as a control and/or evaluation system for a welding device of the type outlined in the generic part of claim 35.

On page 1, line 13 please add the following paragraph:

SUMMARY OF THE INVENTION

On page 1, please amend the next paragraph as follows:

This objective is achieved by the invention due to the characterising features set out in claim 1. The invention relates to a welding device having a current source, at least one electrode, a control and evaluation unit, an input device, a communications interface, a sensor system and a HTTP server in communication with the control and evaluation unit. The advantage of this system is that data can be forwarded to the welding device from a remote site and a data reading relating to the welding device or a welding process can be taken and

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transmitted over long distances. By incorporating a web server or HTTP server of the type known from the prior art, standardised software programmes can be used for the two-way data traffic, thereby ensuring compatibility with a whole range of connection possibilities such as data banks and the most varied of communication partners and communication equipment. Another advantage resides in the fact that this option of transmitting data remotely means that maintenance and software updates can be run remotely, as can access to external welding data banks in which special welding processes or welding settings are stored, thereby saving on the high travelling cost involved in sending a service engineer out.

Please amend the second paragraph on page 2 as follows:

~~The embodiments defined in claims 2 to 4~~ In one embodiment,
the HTTP server can be disposed adjacent to the welding device or
in the current source, in another embodiment the HTTP server can
be disposed external to the welding device or current source.
This HTTP server can establish a connection to a primary network
such as the Internet or an Intranet for data exchange with
another HTTP server. These designs are of advantage because they
provide an easy means of connecting into an already existing or
configured network.

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Please amend the third paragraph on page 2 as follows:

the Another embodiment defined in claim 5 of the invention is that the control or evaluation unit is a computer unit which operates via software modules of a control program and precesses and prepares received data and/or data to be transmitted. This design has advantages since it offers a welding device which can be readily adapted to the individual requirements of the user and is also flexible if any changes have to be made subsequently.

Please amend the fourth paragraph on page 2 as follows:

The invention can also include a communications interface that is a TCP/IP interface that enables a communication to be operated using the TCP/IP protocol. An advantage of the this embodiment outlined in claim 6 is that it enables the welding device to be connected into data transmission networks covering a wide area, which means that virtually everybody will be able to benefit from the advantages of the welding device proposed by the invention.

Please amend the last paragraph on page 2 as follows:

In this case, the communications interface can be designed

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to link into a local area network such as the Internet, or to a global network such as the Internet. With the ~~this~~ embodiments defined in claim 7 or 8, welding process data or settings specific to the internal company or worldwide can be transmitted to a specific welding device or from a specific welding device.

Please amend the first paragraph on page 3 as follows:

Also of advantage is an embodiment wherein the welding device has a control or evaluation unit that has a standardized interface wherein the welding device is connected with a coupling device on the network by a communication device such as a modem or a network card. This feature is beneficial as outlined in claim 9, since the welding device may be docked into the primary network or separated from the primary network in full security.

Please amend the second paragraph on page 3 as follows:

In the embodiment described above, the standardized interface can be a serial interface such as a RS 232 interface. The advantage of ~~the this~~ embodiment defined in claim 10 is that the welding device can be connected to standard commercially available PC-compatible components, which means that its

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functions can be significantly increased whilst reducing on hardware costs.

Please amend the third paragraph on page 3 as follows:

With the embodiment defined in claim 11, of the welding device having a modem, the connection with remote communication partners or communication systems is effected via a tried and tested, very widely used communication means.

Please amend the fourth paragraph on page 3 as follows:

The An embodiment defined in claim 11 that includes data for welding processes that can be downloaded for additional configuration of the welding device enables welding processes to be monitored seamlessly and influenced at any time. In addition, the welding device may be re-configured or new settings entered using smaller quantities of transmission data in the form of codes. These re-configurations or new settings for the welding device can be handled particularly rapidly, inexpensively and securely since the smallest quantities of data are transmitted in the form of codes used to select specific data and programme packages stored in the memory system of the welding device.

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Please amend the fifth paragraph on page 3 as follows:

the In an embodiment wherein the data relating to operating supplies such as quantity or nature of the welding electrode includes a fusible welding wire, an inert gas, and/or data relating to components susceptible to wear such as a contact sleeve, a gas nozzle or similar type device may be transmitted or retrieved from other network participants via the network, defined in claim 13 is of This embodiment has the advantage that since any stoppages of the welding device due to a lack of operating supplies can be virtually ruled out, and data uploads can be left to run automatically, this design virtually obviates the need for human supervision.

Please amend the sixth paragraph on page 3 as follows:

claim 14 In another design, features such as the duration of use, or other welding settings may be retrieved from at least one other network participant and transferred to another network participant. This type of embodiment defines an advantageous embodiment which enables the quality and productivity of the welding process to be monitored from globally dispersed sites or at a production site, allowing steps to be taken if necessary to

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optimise the system.

Please amend the seventh paragraph on page 3 as follows:

An Another embodiment of the invention type outlined in claim 15 or 16 involves a design wherein the input device is set up to operate the welding device and select or navigate the data and select data from data files for welding technology. This type of design has been found to be of advantage since the input device can be used for multiple functions and the application of the input device is basically standard so that there is no need for special training.

Please amend the eighth paragraph on page 3 as follows:

Claim 17 Another embodiment of the invention involves data managed by the control or evaluation unit so that data entered by the input device or retrieved from the primary network can be displayed or indicated by signals on an output device co-operating with the welding device. This design defines an embodiment which makes it easier for the user to operate the welding device and monitor the welding device.

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Please amend the first paragraph on page four as follows:

~~The~~ Another embodiment of the invention reveals that
embodiment defined in claim 10 the control and/or evaluation
unit comprises a personal computer which has an optical output
device such as a monitor. This design has proved to be of
advantage since it enables the welding device to be built
relatively inexpensively and made ready for use at any time.

Please amend the second paragraph on page 4 as follows:

~~An~~ in another ~~as~~ embodiment as defined in claim 19 the software
modules are formed as object oriented programming language and
are ~~is~~ of advantage because the software programme is clearly
structured and can be divided into a logical programme element
and modules for managing and controlling the components of the
welding device.

Please amend the third paragraph on page 4 as follows:

The Another ~~embodiment~~ described in claim 20 enables the
individual software modules to be loaded subsequently at any time
and those new software modules to be seamlessly integrated in the
programme sequence.

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Please amend the fourth paragraph on page 4 as follows:

Claim-21 In another embodiment of the invention, the control or evaluation unit is designed to operate the software modules on a cyclical or interrupt control controlled basis. This embodiment defines an advantageous embodiment which makes it possible to respond very rapidly to safety critical states depending on the respective priority of the states that have occurred or are prevailing.

Please amend the fifth paragraph on page 4 as follows:

An embodiment of the invention is also disclosed wherein the software modules are written in JAVA source language, wherein the control or evaluation unit has a JAVA interpreter that can be operated to read the JAVA source language. This type of design described in claim-22 or 23 is of advantage because a network-optimised programming language is selected, which is independent of the corresponding target hardware and independent of the machine code of the target hardware and can therefore be widely distributed without a knowledge of the target hardware.

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Please amend the sixth paragraph on page 4 as follows:

~~As~~ In another embodiment, defined in claim 24 a JAVA based processor can be used, wherein this is of advantage because it obviates the need for JAVA interpreters and shortens the system running times.

Please amend the seventh paragraph on page 4 as follows:

Claim 25 In another embodiment, there is a communications interface that is designed to set up a wireless data transmission route to the desired communication transmission system or communication partner. This embodiment is defines an advantageous embodiment because the welding device is mobile almost without restriction and the connection to the respective network participant or communication device can still be maintained.

Please amend the eighth paragraph on page 4 as follows:

~~An embodiment as outlined in claim 26 or 27 has been found to be of advantage because~~ In another embodiment, the communication interface can be an infrared interface for

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transmitting or receiving infrared signals between the welding device and a mobile telephone. With this design, there is no need for cable connections to integrate the welding device in a primary data network and there is no problem using tried and tested, functionally secure components.

Please amend the last paragraph on page 4 as follows:

claim 20 In another embodiment, the communications interface is designed to connect directly or indirectly via a network with a programming display unit provided as a stand-alone unit. This embodiment defines an advantageous embodiment since it enables servicing operations, remote analyses, status investigations, configuration changes and similar to be operated in a simple manner.

Please amend the first full paragraph on page 5 as follows:

The objective of the invention is also independently achieved by a method of operating a welding device wherein this method includes the steps of controlling an energy source via a control or evaluation unit to apply electrical energy to at least one electrode. This control and evaluation unit can process

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software modules and operates on the basis of a pre-set set of instructions and any specific settings entered. With this design, there is a communications interface wherein software modules or data can be sent to a web server such as a HTTP server or retrieved from a web server such as a HTTP server, as defined by the characterising features of claim 29. The advantage of this approach is that the welding device can be re-configured particularly quickly and very conveniently and the welding process being run on the welding device can be monitored on a fully automated basis, as can monitoring of the status of the welding device itself. Another advantage resides in the fact that the data base can be centrally maintained, which means that the software modules to be processed are constantly kept up to date. Furthermore, it is an easy matter to store the respective data on a decentralised basis, thereby protecting against loss.

Please amend the second full paragraph on page 5 as follows:

A feature defined in claim 30 of this method can be that the software modules that run or control the evaluation unit are determined by codes transmitted by a network. This design is of advantage because the load on the network can be kept very low and the welding device can also be adapted particularly quickly.

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Please amend the third full paragraph on page 5 as follows:

An approach as defined in claim 31 or 32 Another design, is such that the method includes the step of transmitting the operating data relating to operating supplies operating statuses or similar such that this can be transmitted to other network participants or retrieved by other network participants via the web server. This process also includes the step wherein the evaluation circuit controls a welding process so that the resultant data is transmitted to other network participants. This process is of advantage, enabling stoppages or down-time of the welding device to be largely avoided and providing a means for assessing the quality and productivity of the welding process from a central site.

Please amend the fourth full paragraph on page 5 as follows:

A variant of the this method defined in claim 33 is that the messages or service requests which relate to stocks of operating supplies and/or orders of operating supplies can be downloaded from the control or evaluation unit to other network participants. This feature is of advantage because it ensures that the welding device is provided with operating supplies as

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and when needed, obviating the need to keep a stock of operating supplies or spare parts for the welding device. Automation also makes the system highly reliable.

PLEASE amend the fifth full paragraph on page 5 as follows:

Finally, in another method, the device can use a local area network such as an Intranet or a global network such as the Internet to load or transfer data or software modules. In this case, the feature defined in claim 34 is of advantage because the benefits of the welding device proposed by the invention can be used virtually anywhere and by anybody without restriction, which means that it will be widely used and gain a high degree of acceptance.

Please amend the sixth full paragraph on page 5 as follows:

The objective of the invention is also achieved by the features defined in claim 35 of the invention wherein a control or evaluation unit has a communications interface that can connect to a primary network.

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Please add the following paragraph after the above paragraph
on page 5:

BRIEF DESCRIPTION OF THE DRAWINGS

On page 6, line 9 please add the following paragraph:

DETAILED DESCRIPTION